

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-3 and 5-9 are pending in the present application. No claims have been added, amended or cancelled by the present amendment.

In the outstanding Office Action, claims 1, 2 and 9 were rejected under 35 U.S.C. § 103(a) as unpatentable over Katayama; and claim 3 and 5-8 were rejected under 35 U.S.C. § 103(a) as unpatentable over Katayama in view of Yokota et al.

Claims 1, 2 and 9 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Katayama. This rejection is respectfully traversed.

Independent claim 1 includes a combination elements and is directed to a ball motion measuring apparatus including a CCD camera for photographing a flying ball to obtain original image data, a calculating section for carrying out a magnifying process on only a portion of an original image including a ball image, thereby calculating magnified image data, and a display section for displaying a magnified image based on the magnified image data where the magnified image data is used to calculate ball motion. Further, the calculating section extracts coordinates of an apparent point on the magnified image data, compares the extracted apparent coordinates with corresponding predetermined undistorted coordinates of the ball to thereby calculate an error between the extracted apparent coordinates and the predetermined coordinates, and calculates true coordinates of the points on the magnified image data based on the calculated error. In addition, the calculated error increases in accordance with a distance from a center of the magnified image data.

The Office Action indicates Katayama teaches a calculation section for carrying out a magnifying process on only a portion of an original image including a ball image, thereby calculating magnified image data (and cites Fig. 4, col. 1, lines 60-66, and col. 4, lines 45-65) and a magnifying correction process (and cites Fig. 4, col. 4, lines 45-65). However, it is respectfully noted Katayama does not teach or suggest the claimed magnifying process nor the magnifying correction process.

In more detail, Fig. 4 of Katayama merely displays on a monitoring screen of the control unit 16 a golf ball as it passes by the first camera 14 and second camera 15. That is, the first display area 40A illustrates an original image of the ball 11 taken by the first camera 14 and the display area 40B illustrates the original image of the ball 11 taken by the second camera 15. Note the images in Fig. 4 are not magnified. This differs from the present invention in which a calculation section is used for carrying out a magnification process on only a portion of an original image including a ball image, thereby calculating magnified image data. Further, because the magnification process is performed, the present invention also includes a magnification error process to calculate an error between the extracted apparent coordinates and the predetermined coordinates, and calculating true coordinates of the points on the magnified image data based on the calculated error as shown in Fig. 5 of the present application, for example.

Accordingly, it is respectfully submitted independent claim 1 and each claim depending therefrom are allowable.

Claims 3 and 5-8 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Katayama in view of Yokota et al. This rejection is respectfully traversed.

Independent claim 3 includes similar features as discussed above with respect to independent claim 1. As discussed above, Katayama does not teach or suggest these features. Further, Yokota et al. also does not teach or suggest these features.

Accordingly, it is respectfully submitted independent claim 3 and each claim depending therefrom are also allowable.

CONCLUSION

In view of the above remarks, it is believed that the claims clearly distinguish over the patents relied on by the Examiner, either alone or in combination.

Since the remaining patent cited by the Examiner has not been utilized to reject the claims, but to merely show the state of the art, no comment need be made with respect thereto.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone David A. Bilodeau at (703) 205-8072 in the Washington, DC area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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